

< Ku band internally matched power GaN HEMT >

# MGFK47G3745A

13.75 – 14.5 GHz BAND / 50W

## DESCRIPTION

The MGFK47G3745A, GaN HEMT with an N-channel schottky gate, is designed for Ku-band applications.

## FEATURES

- High voltage operation  
VDS=24V
- High output power  
Po=47.0dBm(TYP.) @Pin=42dBm
- High efficiency  
PAE=30%(TYP.) @Pin=42dBm
- Designed for use in Class AB linear amplifiers

## APPLICATION

- Amplifier for Ku-band SATCOM

## QUALITY

- General & Industrial

## Packaging

- 4 inch Tray (9 pcs)

## RECOMMENDED BIAS CONDITIONS

- Vds=24V • Ids=1.26A • Rg=13.3Ω

## Absolute maximum ratings (Ta=25°C)

Symbol	Parameter	Ratings	Unit
VDS	Drain to Source Voltage at Operating	25	V
VGS	Gate to source voltage	-10	V
PT*1	Total power dissipation	128.1	W
Tch	Channel temperature	230	°C
Tstg	Storage temperature	-65 to +175	°C

\*1:Tc=25°C

## Recommended operating Condition

Symbol	Parameter	Limit	Unit
Pin-ave	Average Input power	≤42	dBm
Tch	Channel temperature	≤175	°C
I <sub>GR</sub>	Reverse gate current	-40	mA
I <sub>GF</sub>	Forward gate current	80	mA

## Electrical characteristics (Ta=25°C)

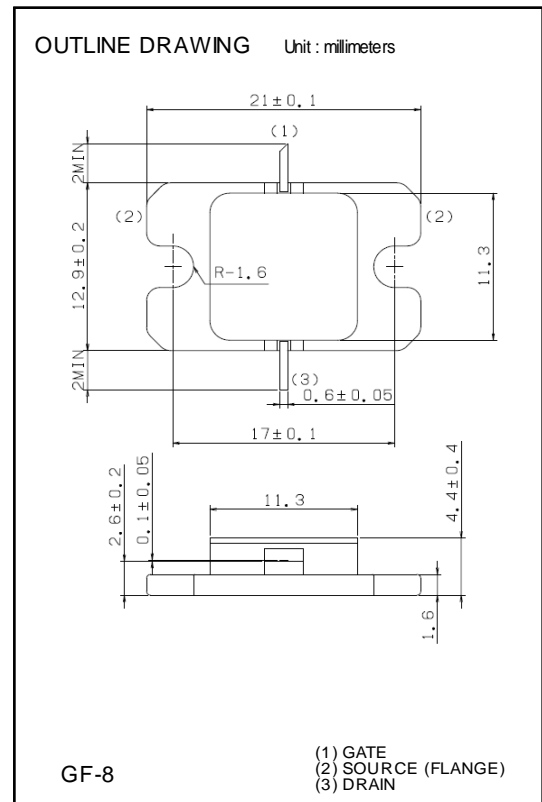
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
VGS(off)	Gate to source cut-off voltage	VDS=24V, ID=12.6mA	-1	-	-5	V
Pout *2	Output Power	VDS=24V, ID(RF off)=1.26A	46	47	-	dBm
PAE *2	Power added efficiency	f=13.75 – 14.5GHz	-	30	-	%
GLP *3	Linear power gain	*2 : Pin=42dBm *3 : Pin=20dBm	7	8	-	dB
IM3*4	3 <sup>rd</sup> Order Intermodulation distortion	*4 : Single Carrier Level, Po=41dBm under two-tone test	-25	-	-	dBc
Rth(ch-c) *5	Thermal resistance	ΔVf method	-	1.2	1.6	°C/W

\*5 :Channel-case

Specifications are subject to change without notice.

ESD *5	Class 0	-199~
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\*5 :Based on EIAJ ED-4701 C-111A(C=100pF,R=1.5kΩ)



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